ABSTRACT

VECTORS FOR GENE TRANSFER

Improved recombinant retrotransposon vectors for gene transfer are disclosed. The synthetic vectors are truncated so as to reduce or altogether eliminate homologous recombination with retroviral helper sequences found in helper cells used to propagate the vectors, making them safer for use in humans and providing more space for therapeutic genes. The vectors transmit foreign DNA efficiently, are stable, enable abundant RNA expression from the retrotransposon transcriptional promoter, and through their diversity permit many useful applications in therapeutics and transgenics. Methods are described for rescuing tissue-specifics promoters obtaining expression in primary cells, mapping the genome and other techniques of therapeutic and transgenic utility.